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Signor *Settalla* at *Milan* causeth to be made a *Burning-glass* of *seven* Foot in Diameter. He pretends to make it Burne at the distance of fifty *Palmes* ( which is about 33 Foot.)

### *Observations*

*Concerning* *Cochineel*, accompanied with some suggestions for finding out and preparing such like substances out of other Vegetables.

**I**T is generally believed, that the *Cochineel* comes out of a fruit called the *Prickle-pear*, bearing a leafe of a slimy nature, and a fruit bloud-red and full of Seeds, which give a Dye almost like to *Brafiletto* wood, that will perish in a few dayes by the Fire: But the *Insect* engendred of this fruit or leaves, gives a permanent Tincture, as is generally known.

There grows a Berry ( by report ) both in the *Bermudas* and *New-England*, call'd the *Summer-Island-Redweed*, which Berry is as red as the *Prickle-Peare*, giving much the like tincture; out of which Berry come out first Worms, which afterward turn into Flyes somewhat bigger then the *Cochineel-Flye*, feeding on the same Berry: In which we read, there hath been found a colour no whit inferior to that of the *Cochineel-Flye*, and as to Medicinal vertue much exceeding it.

'Tis hereupon offer'd to consideration and tryal, 1. Whether this *Bermuda-Berry* might not grow in *England*? 2. VVhether out of the Berry of *Brafiletto*-wood the like insect might not be obtained in respect of colour or tincture? 3. VVhether a fading colour, yielded by certain Vegetables, might not be fixed by causing such a Fermentation in the Concrete, as may engender Insects giving the tincture of its original, which will hold in Grain?

For the obtaining of the last we find the following directions. VVhereas Vegetables of Tincture are either Herbs, or VVoods, or Berries and other Fruits; to breed Insects out of *Herbes*, dry them, (for so they yield the best tincture;) otherwise stamp them, and let them dry, till they will suffer no more juyce to run from them, (this in the Sun or in a proportionable heat:) or if

if dried, infuse them with water in a heat for 24 houres; then vapour away the water till the dissolution be as thick as a Syrup (but for this use strain them not from their *feces*;) take this Masse, and put it into an Earthen or Woodden-Vessel coverd with some Straw or something else of that nature, that it lye not too close, and so proportion the quantity to the Vessel, that the Air may come *about* and *into* the Masse (yet not too much.) Then set this vessel in a ditch or pit made in the Earth in a shady place, and put about it some wet leaves or some such putrifying rubbish, and over it a board, and on that some straw or the like; and it will produce first a shelly husky Worm, and then a Fly of the Tincture of the Concrete, but durable and somewhat more advanc'd.

And as for *Berries*, stamp and boyle them, evaporating them to the consistence of a Robe, and then use them as the former.

Lastly, for *Woods*, infuse them in water, being first pulveriz'd, and boyle out their tincture, and then evaporate also the Water to such a thickness, as the other, and handle them in the like way. The Flyes will play about the sides of the Vessel and the surface of the matter, which taken are kill'd in a warm pan or stove, and so dried and kept.

### *Queries*

*Concerning Vegetation, especially the Motion of the Juyces of Vegetables, communicated by some Curious persons.*

1. **W**Hat Vegetables there are, which, having the wrong end of them set downward into the ground, will yet grow; as 'tis said *Elders* and *Bryars* will.

2. Whether the Branch of a Plant (as of a *Vine* or *Bramble*) being laid into the ground whil'st yet growing on the Tree, and there taking root, being cut off from the Tree whil'st so growing, will shoot out forward and backward?

3. In tapping, cutting or boring of any Tree, whether the Juyce, that vents at it, comes from above or below.

4. What *part* of the Juyce ascends or descends by the *Bark*?

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